

App Developer: Athletics And Body Systems

Performance Task

Introduction

As apps have become more and more popular, fitness apps are starting to pop up that help people track their activity and what is happening with their bodies. Many companies have begun to see the value in creating this type of app. App development is a technological process that includes the development of content. Content developers often work separately from the technology developers, so it is important that they are explicit about what the app user needs to know and how it should be displayed for them. In this task you will be helping to develop content for a new fitness app that will help people understand the connection between activities/sports, nutrition and body systems.

Big Idea / Essential Questions

Big Idea

- The functions and interactions of human body systems (for example: circulatory, respiratory, muscular, skeletal, digestive) and the levels of organization within the human body are responsible for a healthy and functioning body.
- Cells and cellular organelles have specific structures and functions based upon the type cell.

Essential Questions

- How does the structure and function of a body system relate to overall health?
- What are cellular organelles and how do they help the body systems do their jobs when people are active?

G.R.A.S.P.

Goal

Your goal is to develop content for a new app. This app should help athletes understand how their body is made up of systems that all work together to help accomplish various exercises and athletic activities. They will need to understand the connection between the mind, nutrition, and systems associated with athletics.

Role

You are part of a team of physical trainers specializing in nutrition, cardiovascular exercise, and physical training. Your group has been hired by an app developer to assist in creating an app that will help athletes prepare their bodies for the upcoming sports season.

Audience

Your first audience will be the app developers who will be creating this app based upon your work. Your second audience will be individuals and teams purchasing the app. A majority of these people will be coaches, athletes and their parents. They need to understand how the body is a system of interacting subsystems. They will also need to understand how organs make up these systems and that the systems are dependent upon each other.

Situation

In this task, you may not be included in the actual development of the app. Like many technology companies, it is possible that the developers are located in another city or state. The products you create will be very important for the app developer and the potential audience. The goal of the app developer is to have a number of sports and athletic activities represented for both males and females. Your work will help the developer reach this goal.

The success of the app will be directly connected to how well your team helps the user understand the importance of the body systems and their work within and between systems.

Products

1. App Graphic Organizer

Create a graphic organizer that brings all of the products together in a manner that would make sense to the app developer. Connect the different products and their relationships. Build this graphic organizer in a way that would be user friendly for the person using the app on their tablet.

You may want to check out a couple of apps to get ideas related to their form and function. This graphic organizer should focus on the sport you selected to research. Then, once you have given the app company a layout, they can follow this idea for any other sport they want to include.

- What facts, concepts and ideas need to be communicated to the user of the app?
- How will you visually organize the information from the other products you created?

Artist Rendering - App Developer: Athletics And Body Systems

Achievement Levels	1	2	3	4
Graphic Representation (x1)	Product minimally uses color, font or layout.	Product somewhat uses color, font and layout in an attempt to enhance audience understanding of complex ideas and/or concepts.	Product uses adequate color, font and layout to enhance audience understanding of complex ideas and/or concepts.	Product uses excellent choice of color, font and layout to enhance audience understanding of complex ideas and/or concepts.
User Needs (x1)	Visuals and information provided show minimal understanding of the wants and needs of the app developer and/or audience.	Visuals and information provided show some understanding of the wants and needs of the app developer and/or audience.	Visuals and information provided show understanding of the wants and needs of the app developer and/or audience.	Visuals and information provided show excellent understanding of the wants and needs of the app developer and/or audience.
	Product provides little	Product provides some	Product provides adequate	Product provides thorough

Achievement Body Systems and Levels Connections (x1)	1			
	2			
App Development (x1)	3			
	4			
	connection among the selected sport, how individual body systems function during that activity, and how the systems work together to allow the person to play the sport.	connection among the selected sport, how individual body systems function during that activity, and how the systems work together to allow the person to play the sport.	connection among the selected sport, how individual body systems function during that activity, and how the systems work together to allow the person to play the sport.	connections among the selected sport, how individual body systems function during that activity, and how the systems work together to allow the person to play the sport.
	Product minimally connects the different products and demonstrates how they will work together to make a comprehensive app.	Product somewhat connects the different products and demonstrates how they will work together to make a comprehensive app.	Product connects the different products and demonstrates how they will work together to make a comprehensive app.	Product thoroughly connects the different products and demonstrates how they will work together to make a comprehensive app.
	Product provides an inaccurate visual of the cell and descriptions that minimally help viewers understand the structure of parts, their function, and the relationship among parts. .	Product provides a partially accurate visual of the cell and descriptions that somewhat help viewers understand the structure of parts, their function, and the relationship among parts.	Product provides a mostly accurate visual of the cell and adequate descriptions that help viewers understand the structure of parts, their function, and the relationship among parts.	Product provides an accurate visual of the cell and excellent descriptions that help viewers understand the structure of parts, their function, and the relationship among parts.
	Product includes little valuable information related to how exercise and nutrition help body systems to function and support athletic activity.	Product includes some valuable information related to how exercise and nutrition help body systems to function and support athletic activity.	Product includes mostly valuable information related to how exercise and nutrition help body systems to function and support athletic activity.	Product includes valuable and critical information related to how exercise and nutrition help body systems to function and support athletic activity.

2. Diagram and Descriptions

Create a diagram of the cell with the important parts of the cell identified. Label each part and briefly describe its primary function. Describe the function of a cell as a whole and ways parts of cells contribute to the function. Also, include which organ or body system in the human body has a similar role to each organelle.

- What are the functions of different parts of a human cell?
- How are the functions of parts of the cell related to functions of body systems?

Diagram - App Developer: Athletics And Body Systems

Achievement Levels	1	2	3	4
Labels (x1)	Very few important parts of the cell are clearly labeled.	Some important parts of the cell are clearly labeled.	Most important parts of the cell are clearly labeled.	All important parts of the cell are clearly labeled.
Cell Structure and Function (x1)	The diagram provides an inaccurate visual of the cell and descriptions that minimally help viewers understand the structure of parts, their function, and the relationship among parts.	The diagram provides a partially accurate visual of the cell and descriptions that somewhat help viewers understand the structure of parts, their function, and the relationship among parts.	The diagram provides a mostly accurate visual of the cell and adequate descriptions that help viewers understand the structure of parts, their function, and the relationship among parts.	The diagram provides an accurate visual of the cell and excellent descriptions that help viewers understand the structure of parts, their function, and the relationship among parts.
Organs and Body Systems (x1)	The diagram does not provide information related to cells and organs and their connections to the function of a body system.	The diagram provides little information related to cells and organs and their connections to the function of a body system.	The diagram provides some information related to cells and organs and their connections to the function of a body system.	The diagram provides critical information related to cells and organs and their connections to the function of a body system.
Cell Organelle Interactions (x1)	The diagram provides minimal evidence visually describing and explaining the function of a cell as a whole	The diagram provides partial evidence visually describing and explaining the function of a cell as a whole and ways	The diagram provides sufficient evidence visually describing and explaining the function of a cell as a whole	The diagram provides strong evidence visually describing and explaining the function of a cell as a whole and ways

3. Abstract

Create a one-half to one page write-up for each of the following body systems: Digestive System (consider nutrition here as well), Respiratory System, Cardiovascular System, Muscular System, Excretory System, and the Nervous System. The write-ups should describe how the components of the system interact together and with other systems to help create a stronger, faster, healthier athlete.

- Why are each of the systems in the product description important for athletic activity?
- How do these systems work together to help an athlete?

Abstract - App Developer: Athletics And Body Systems

Achievement Levels	1	2	3	4
Informational Writing (x1)	The product is minimally constructed using little evidence based upon research.	The product is somewhat well constructed using relevant evidence based upon research to emphasize some important points.	The product is adequately constructed using relevant evidence based upon research to emphasize important points.	The product is thoroughly constructed using relevant evidence based upon research to emphasize important points.
Organization (x1)	No apparent arrangement of content. Writing has minimal focus or purpose of task.	Partially clear arrangement of content and a few effective transitions. Writing has some focus and purpose of task.	Logical arrangement of content with some effective transitions. Writing demonstrates focus of content and purpose of task.	Appropriate and clear arrangement of content with effective transitions. Writing has good focus and purpose of task is well defined.
Body Systems and Connections Between Systems (x1)	Abstract gives a minimal explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.	Abstract gives a partial explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.	Abstract gives sufficient explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.	Abstract gives a thorough explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.
Exercise and Nutrition (x1)	The product provides little evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.	The product provides some evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.	The product provides sufficient evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.	The product provides strong evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.
Conventions (x1)	Minimal control of sentence formation. Many sentences are awkward and fragmented. Many errors may be present in grammar, usage, spelling, and punctuation, and many of those errors may interfere with meaning.	Limited and/or inconsistent control of sentence formation. Some sentences may be awkward or fragmented. Many errors may be present in grammar, usage, spelling, and punctuation, and some of those errors may interfere with meaning.	Adequate control of sentence formation. Some errors may be present in grammar, usage, spelling and punctuation, but few, if any, of the errors that are present may interfere with meaning.	Thorough control of sentence formation. Few errors, if any, are present in grammar, usage, spelling, and punctuation, but the errors that are present do not interfere with meaning.

4. Multimedia Presentation

Create a multimedia presentation that highlights the role of systems of the body during an athletic activity. Your team may select any sport for your presentation. You will need

to conduct research to learn about specific activities involved in the sport and how the systems of the body are working while a person participates in that sport. Your presentation should touch on the following systems no matter what sport you choose: the Digestive System, the Respiratory System, the Cardiovascular System, the Muscular System, and the brain.

Your presentation should also tell what exercises and nutrition can help the body systems function at their best while a person plays this sport. The following website may help you get ideas for how to design your presentation. Please remember you need to educate the audience a way that is easy to understand.

[How Running the Marathon Affects the Body](#)

- What body systems are involved in the sport you selected and how do they work alone and together for athletes?
- What are the key needs of an athlete playing the sport you selected?
- What exercises and nutrition help the athlete do their best at a sport?

Multimedia Presentation - App Developer: Athletics And Body Systems

Achievement Levels	1	2	3	4
Layout (x1)	The layout is challenging to see and read. The presentation does not flow from one part to another.	The layout is a little difficult to see and read. The presentation somewhat flows from one part to the next.	The layout is mostly easy to see and read. The presentation flows from one part to the next.	The layout is easy to see and read. The presentation flows well from one part to the next.
Conventions (x1)	There are many errors in spelling, punctuation and/or grammar in the text of the presentation.	There are some errors in spelling, punctuation, and/or grammar in the text of the presentation.	There are few errors in spelling, punctuation, and/or grammar in the text of the presentation.	There are no errors in spelling, punctuation, and/or grammar in the text of the presentation.
Technology (x1)	The technology used to create the presentation including images, videos and audio, minimally communicate the intended message.	The technology used to create the presentation including images, videos and audio, partially communicate the intended message.	The technology used to create the presentation including images, videos and audio, adequately communicate the intended message.	The technology used to create the presentation including images, videos and audio, strongly communicate the intended message.
Body Systems and Connections Between Systems (x1)	Presentation gives a minimal explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.	Presentation gives a partial explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.	Presentation gives sufficient explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.	Presentation gives a thorough explanation of the organs and processes of individual body systems, how the system functions as a whole during the sport, and how each system interacts with the other systems mentioned.
Exercise and Nutrition (x1)	The product provides little evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.	The product provides some evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.	The product provides sufficient evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.	The product provides strong evidence of how exercise and nutrition influence the health and performance of an athlete in a sport through their effect on bodily systems.

5. Podcast

Create a 45-60 second podcast that discusses a sport that you have selected. The podcast should provide an overview of the training needed to help the body systems

work together to help provide a stronger, faster athlete based upon the needs of the sport. Additionally, be sure to mention some nutritional needs necessary for the athlete to succeed.

- What body movements are necessary to succeed in a sport?
- What nutrition is important for the athlete in their sport?

Podcast - App Developer: Athletics And Body Systems

Achievement Levels	1	2	3	4
Delivery (x1)	The communication limits audience engagement and makes it difficult to understand the topic.	The communication somewhat limits audience engagement and makes it difficult to fully understand the topic.	Rehearsed, effective communication is exhibited and an easy to understand conversational style is used to engage the audience.	Well rehearsed, highly effective communication using an easy to understand conversational style which engages the audience.
Organization (x1)	The information given in the product is unorganized and the flow is confusing to the reader.	The information given in the product is somewhat organized and the flow partially makes sense to the reader.	The information given in the product is organized and the flow mostly makes sense to the reader.	The information given in the product is well organized and the flow makes sense to the reader.
Activities and Nutrition to help Body Systems make the Body Healthier (x1)	The podcast provides little valuable information related to how exercise and nutrition help body systems to function and support athletic activity.	The podcast provides some valuable information related to how exercise and nutrition help body systems to function and support athletic activity.	The podcast provides mostly valuable information related to how exercise and nutrition help body systems to function and support athletic activity.	The podcast provides valuable and critical information related to how exercise and nutrition help body systems to function and support athletic activity.
Body Systems and Connections (x1)	Podcast provides a minimally accurate overview of the systems of the body and how these interact with one another when a person plays the selected sport.	Podcast provides a partially accurate overview of the systems of the body and how these interact with one another when a person plays the selected sport.	Podcast provides a mostly accurate overview of the systems of the body and how these interact with one another when a person plays the selected sport.	Podcast provides an accurate overview of the systems of the body and how these interact with one another when a person plays the selected sport.